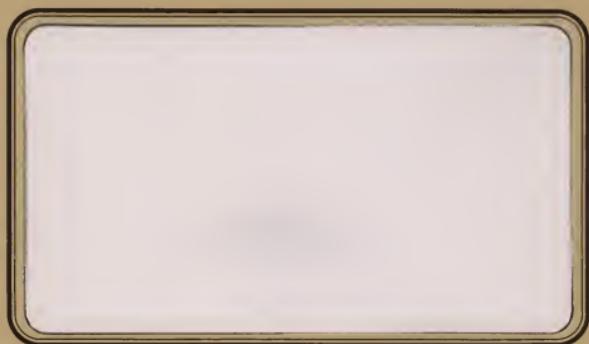


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**Competition and Regulation: The Selection  
and Competitive Effects of  
Health Maintenance Organizations**

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## Competition and Regulation: The Selection and Competitive Effects of Health Maintenance Organizations

### Purpose:

This project was designed to address two major research and policy issues concerning Health Maintenance Organizations (HMO's). The first question is how much of the difference in cost and medical care utilization observed for enrollees in HMO's and conventional insurance plans is attributable to the efficiencies of the utilizing people in HMO's? The second question is to what extent does the growth and development of HMO's cause a competitive response by conventional insurers and providers that results in lower utilization and costs for people not enrolled in HMO's.

### Background

The two questions have substantial bearing upon public policy. The lower costs of medical care for enrollees in HMO's relative to those in conventional plans is well documented in the research literature. While the research supports the notion that costs are 10-40 percent lower for HMO enrollees, much of the public encouragement for HMO growth is based on the perception that HMO's reduce costs by 10-40 percent. In fact, it is possible that HMO's are no more efficient than conventional providers, but through various mechanisms they select or attract enrollees who are naturally less expensive than the average. If this were the case, and the entire observed difference were attributable to this selection effect, then the development and expansion of HMO's would have no net effect on total health care costs. (In fact, costs would rise to cover the startup expense of the new plans.) If selection accounts for all the observed differences, then plans to provide vouchers for Medicare beneficiaries to join HMO's might increase Federal costs if those joining HMO's were actually 20 percent less costly than the average but received vouchers set at 5 percent below the average cost. On the other hand, if selection accounts for only a tiny fraction of the observed cost differences, then substantial savings might be realized through the encouragement of HMO's.

With HMO's enrolling only about 4 percent of the population by the end of the 1970's, it would be decades before even a majority of people were enrolled. However, the notion of a competitive impact of HMO's returned them to an important position in policy discussions. If a relatively small HMO market share, say 15-20 percent in a given locality, could lead conventional providers to change their practice patterns and become more cost-effective, then the growth of HMO's would have an impact far exceeding their direct enrollment. Furthermore, this cost-containing effect would take place through the workings of the competitive market rather than through direct government regulation.

It became apparent that not all competitive responses need be cost-containing. Conventional providers might respond, at least initially, to the loss of patients to HMO's by increasing fees and services provided to the remaining patients. This would increase costs to those in the conventional system, and if some of those patients, such as Medicare and Medicaid beneficiaries, did not have the option of joining HMO's, then the cost-increasing competitive response might be an important long-term possibility. More importantly, market segmentation, cost-containing and cost-increasing responses might coexist, with substantial policy implications.

#### Descriptions

Those considerations led to the design of a complex, multipart project. The major effort was to focus on a combined time-series cross-section model of hospital utilization of three population groups across all States and extending back to 1947, to predate the development of most HMO's. The time series data would allow greater confidence in assigning causality to competitive effects. The three population groups--Federal employees enrolled in the Blue Cross/Blue Shield plan, all Blue Cross enrollees, and all persons--would allow the estimation of the magnitudes of the selection effect, the "true HMO" effect, and the competitive effect. These quantitative estimates would be supplemented by case studies of a few areas to provide a better sense of how the competitive impacts of HMO's were manifested.

A major midstream change in the project design was made in response both to data limitations and initial findings. When the grant proposal was being developed it was recognized that the collection of cross-sectional data over a 30-year time period would be a major undertaking and that various inconsistencies in the data sets would be discovered.

The data problems encountered in this project relate to enrollment estimates in almost all health insurance plans, and in particular, to Federal and total enrollees in Blue Cross. Some errors in enrollment estimates were anticipated, but they were expected to be random. An examination of hospital utilization trends for Blue Cross enrollees and for all persons (derived from American Hospital Association and Census statistics) indicated a growing divergence that appears related to growing duplication of insurance coverage. Rather than there being random errors, the problem was clearly correlated with time and thus jeopardized the interpretation of the time series data. A second blow came with the realization that duplicate health insurance coverage also varied by State, and it, too was not random, but was systematically related to some factors important in the proposed analysis.

#### Analysis

The duplicate coverage "problem" meant that there could not be any confidence in an analysis of either set of Blue Cross data. The overall measure of hospital use from the American Hospital Association was still valid and could be used to provide an estimate of the net impact of the true HMO effect, the selection effect, and the competitive effects. By this time some preliminary results became available

from case studies of Hawaii, Rochester, New York, and Minneapolis-St. Paul. These areas were chosen because others had indicated the presence of substantial cost containing competitive impacts, and it was thought that more careful analysis would help demonstrate how such effects occur. In each area the evidence for a cost-containing effect was either very weak or, if utilization rates had fallen, other explanations for the observed decline seemed at least as plausible as HMO competition. The initial work on the case studies suggested that in certain circumstances a cost or utilization reduction was correlated both with HMO development and other changes in the local medical care market. This implied that a focus on only the HMO's influence might result in the incorrect interpretation that the cost-containing change is due to the HMO. In order to minimize the chance of an incorrect interpretation of causal linkages, it was necessary to reject all the other potential causes before suggesting the presence of a cost-containing competitive effect of HMO's.

The three case studies on Hawaii, Rochester, New York, and Minneapolis-St. Paul are pursued in detail, largely because alternative explanations were the focus of attention rather than a more simple description of how an HMO affects the local medical care system. The case studies raised important questions concerning the reliability and validity of some of the available data. The significance of these questions varies with the problems at hand, but were sufficient to cast doubt over the interpretation of the results.

### Key Findings

The case studies indicated substantial differences across areas and over time in the proportion of hospital days in short-term hospitals due to long-term care patients. This suggested a potential weakness that could not be eliminated through statistical manipulation.

A reevaluation of the two existing studies suggest a cost-containing competitive effect using single cross sections. The data used in the analysis are not directly comparable to the other studies because of differences in unit of observation and time, but a comparison between results provide a reconciliation of conflicting findings: there is a weak, negative HMO effect on total hospital use, but a positive and sometimes significant effect on use of non-HMO members. These results indicate that a cost-containing HMO competitive effect is at best weak and there may be a cost-increasing impact for non-HMO members, either through selection effects or cost-increasing competitive responses. Most importantly, the data and available analyses are too weak to provide a reliable foundation for policies either strongly encouraging or strongly discouraging the development of HMO's for the purpose of containing costs among non-HMO enrollees.

The statements and data contained in this internal working paper are solely those of the authors and do not express any official opinion or endorsement by the Health Care Financing Administration.

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